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PRACTICE

UNCERTAINTIES

Which emollients are effective and acceptable for eczema in children?

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What you need to know

- Although emollients alone can help reduce the symptoms of eczema and prevent flares, most people will need to use anti-inflammatory treatments such as topical corticosteroids of an appropriate strength and duration as well
- Effectiveness and acceptability of emollients varies according to disease severity, body site, climate, container, and patient or carer preferences and beliefs
- Based on current evidence, the "best" emollient is the one that the individual prefers after a period of testing

Atopic eczema or dermatitis, commonly referred to as eczema, is characterised by dry, itchy skin. Although mainly a childhood condition, this disease commonly persists into or develops in adulthood.[1] Patients are advised to use "leave-on" emollients or moisturisers, applied directly to the skin which add or help retain moisture.[2 3] While evidence of their clinical effectiveness is limited, their use is ingrained in clinical practice and guidelines.[2]

Many different emollients can be prescribed or bought over the counter. Most are formulated as lotions, creams, gels, or ointments (see infographic). There is little evidence to recommend one type of emollient over another. Healthcare professional recommendation is the main source of advice when choosing a prescribed emollient.[4] Preferences of the patient or carer are critical and may be influenced by the characteristics of the emollient, patient, and environment.[5] The National Institute for Health and Care Excellence (NICE) recommends patients try different emollients in the clinic before choosing.[2] This approach is not practical in most primary care settings, and even in specialist clinics the range of emollients available to try can be arbitrary and influenced by pharmaceutical companies and local formularies.

Older, cheaper emollients may be as effective as newer, more expensive ones,[6] and the advantages of products that claim "dermatologically tested," "fragrance-free," and "hypoallergenic" are dubious.[7] Through a process of trial and error, families often try many different emollients before either finding one that works for them[8 9] or giving up and turning to unorthodox treatments which may be harmful.[10]

"Which emollients are the most effective and safe in treating eczema?" emerged as one of the highest ranked uncertainties in a James Lind Alliance research priority setting exercise involving patients and healthcare professionals.[11]

What is the evidence of uncertainty?

Sources and selection criteria

A Cochrane review published in 2017 evaluated the effectiveness of emollients in eczema. To supplement the Cochrane Review, we searched Ovid MEDLINE, and Embase for studies between 2017 and 2019 comparing different leave-on emollients for children with eczema. We used variations of terms such as infant, baby, child, adolescent, paediatrics, emollients, and eczema.

A Cochrane Review (77 trials, 6603 participants) noted beneficial effects with use of most emollients for eczema in prolonging time to flare, reducing the number of flares and the need for topical corticosteroids. The evidence on whether some moisturisers or their ingredients were better than others is inconclusive,[12] leading to uncertainty about how emollients compare, both across and within each type. Most studies (70/77) had "unclear" to "high" risk of bias. Most head-to-head comparisons had been evaluated in single studies which generally had small sample sizes. Participant-assessed disease

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This is one of a series of occasional articles that highlight areas of practice where management lacks convincing supporting evidence. The series advisers are Sera Tort, clinical editor, and David Tovey, editor in chief, the Cochrane Library. This paper is based on a research priority identified and commissioned by the National Institute for Health Research's Health Technology Assessment programme on an important clinical uncertainty. To suggest a topic for this series, please email us at uncertainties@bmj.com

severity was reported in 24 studies, and three studies used a validated instrument. Participant satisfaction with treatment was assessed in 13 studies. Reporting of adverse events—commonly rash, itch. pain, or stinging—with use of emollients was limited.

Subsequently, the COMET study reported on the feasibility of a trial in primary care comparing four different types of emollients (Aveeno lotion, Diprobase cream, Doublebase gel, Hydromol ointment) in children up to 5 years of age.[13] It was not powered to compare the effectiveness of the interventions, but eczema severity improved in all groups over a 12 week period.[14] An open-label study[15 16] randomised 335 children aged 2-6 years with mild to moderate atopic dermatitis to Dexeryl (V0034CR) cream, Atopiclair cream, or no emollient: the proportion of patients with one or more flares and the number of flares was lower in both emollient groups, with Dexeryl cream seeming to perform better than Atopiclair cream.

This uncertainty is reflected in prescribing guidance. A recent review in England and Wales identified 102 different emollient formularies that made conflicting recommendations about 109 different emollients.[17]

Is ongoing research likely to provide relevant evidence?

Because of variability of eczema and associated skin dryness between and within patients, it is unlikely that any one emollient will suit everyone. Further evidence must guide "first line" emollient recommendations based on comparative clinical effectiveness and safety in children.

We are running a trial comparing different leave-on emollients in children with eczema. The BEE (best emollients for eczema) study is recruiting children aged 6 months to 12 years in England, and will report in 2021 (www.isrctn.com/ISRCTN84540529, www.bristol.ac.uk/bee-study). The study compares four of the most commonly prescribed types of paraffin-based emollient: lotions, creams, gels, and ointments. The primary outcome is a patient-reported measure of eczema symptoms (POEM) over 16 weeks, with eczema signs and quality of life as secondary outcomes. Participants will be followed up for 52 weeks, and a nested qualitative study will explore perceived effectiveness and acceptability of study emollients by carers and older children.

We searched Cochrane CENTRAL and WHO ICTRP databases (using the terms emollient OR emollients OR moisturiser OR moisturisers OR moisturizer OR moisturizers) and found no other ongoing trials in children.

Recommendations for future research

- What are the characteristics of an "ideal" emollient and how do people trade-off different aspects such as frequency of application and consistency?
- What is the optimum quantity or frequency of application and how does this vary by eczema severity and type of emollient?
- Are "brand" and "generic" emollients equivalent in their effectiveness, acceptability, and adverse effects?
- Are new emollients any better than old?

What should we do in the light of the uncertainty?

Discuss the uncertainty with your patient

Promote an open and honest conversation about what emollients are for, what patients have bought or had prescribed before, how often they were applied, and what they did or did not like about them. Consider factors that may affect clinician and carer/patient preference for different emollients (see infographic). Ensure carers and older children understand that:

- There are four main formulation types, and we do not know whether one emollient is better than another
- There may be trade-off between effectiveness and acceptability—the best emollient(s) for them may change over time and vary by body site, by whether the eczema is acute or chronic, and by season, but will be one(s) that they are willing to use regularly
- An ointment is greasier, can be hard to apply, and is less cosmetically acceptable. It may be preferred in more severe eczema over a cream, for example, because it requires less frequent application and does not contain any additives that may irritate the skin
- Some are more acceptable as "soap substitutes" than others.

Prescribing an emollient

Refer to your local formulary and start with emollients without urea or antimicrobials. These ingredients are more likely to cause irritation and are generally reserved for troublesome or recurrently "infected" eczema.[5] Some problems with emollients can be related to specific ingredients, such as sodium lauryl sulphate (SLS). Avoid prescribing an alternative with the same skin "sensitisers." MIMS provides one readily accessible source to help guide clinicians.[18] Aqueous cream is not recommended as a leave-on treatment.[12] Prescribing one or more emollients in 100 g quantities as "testers," to try on different body sites may be preferred initially. Make appropriate amounts (500 g or mL) of the preferred emollient(s) available on repeat prescription, allowing for supplies for nursery or school.

Topical corticosteroids will be needed by children with all but the mildest eczema to treat or, used prophylactically,[19] to prevent disease flares. Ensure that the family have an adequate supply and confidence to use them according to the site and severity of eczema. A common reason for discontinuation of emollients is "stinging," which may be due to under-treated inflamed skin and will only improve with topical corticosteroids (or calcineurin inhibitors where there are concerns about the site or duration of use).

Explain how it is to be used

Explain how best to apply the emollient: with clean hands, using downward strokes (to reduce the risk of folliculitis), allowing it to soak in (rather than rubbing). Emollients that come in pots can act as a potential infection reservoir. To reduce this risk, spoon the emollient out when needed and replace the lid.

Be specific on frequency of application (usually at least twice daily and as required) and timing in relation to topical corticosteroids (allowing up to 60 minutes between the applications to avoid dilution, order probably doesn't matter). Direct patients to reliable sources of written information and consider giving them a personalised treatment plan.[20]

Follow-up

Offer review in two to four weeks (by telephone if suitable and preferable for the carer) to reassess disease severity, treatment use, and the acceptability of the emollient(s) to the family. Offer alternatives according to any reported problems, such as a thinner emollient where cosmesis is a concern. Finding a safe and acceptable regimen that achieves the outcome(s) important

to the family is more important than focusing on frequency or quantity of emollient use.

Patients' perspective

"Many of our member families tell us how important the texture, smell, or sensation of creams are to their children. Without the young patients' buy-in, treating eczema can turn into discouraging daily battles for parents and carers. Reducing choice or access to a variety of eczema treatments is a is a huge risk as they may not 'work' as well, or adherence to treatment may decrease, leading to the deterioration of the skin condition and triggering return GP appointments or referrals to secondary care."

Magali Redding, chief executive officer of Eczema Outreach Support (a charity providing practical and emotional support to families of children and young people with eczema in the UK, www.eos.org.uk)

What patients and carers need to know

- Eczema is an inflammatory skin disease that needs anti-inflammatory treatment with topical corticosteroids to get redness and itching under control
- Emollients treat the dry skin associated with eczema and may help to prevent flares
- Research comparing different "leave-on" emollients is limited, so the key thing is to find one(s) that suits you and your child, which over time may change
- It is important to apply emollients to your child regularly (usually twice a day) as a maintenance treatment
- Emollients are safe, and any adverse effects are usually localised and mild. However, take care to avoid any slips or falls through their use, such as when washing
- Do not smoke or go near naked flames because clothing or fabric that have been in contact with an emollient or emollient-treated skin can rapidly ignite (https://www.gov.uk/drug-safety-update/emollients-new-information-about-risk-of-severe-and-fatal-burns-with-paraffin-containing-and-paraffin-free-emollients)

Education into practice

- How do you routinely discuss the different types of emollients available with patients when prescribing?
- Review whether patients with eczema you have seen at your practice have been prescribed an anti-inflammatory treatment alongside their emollient
- How do you review the use and acceptability of eczema treatments by carers and patients?

How patients were involved in the creation of this article

Our discussions with parents of children with eczema who are members of the BEE study's Patient and Public Involvement group informed the initial draft. One of our coauthors has had eczema all her life and has raised two children with eczema. Issues raised and incorporated into the article were: problematic use of terms such as "hypoallergenic"; the variability of eczema between and within people, meaning there is unlikely to be any "best" emollient; concerns about restriction of access to different emollients and carer/patient choice; the importance of emollients being provided for use at nursery or school, the possible need for different types for different body sites, purposes, and over time; sensory aspects of emollients; and the potential versatility of one emollient as both leave-on emollient and soap substitute.

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